2018 State Water Efficiency and Enhancement Program

Technical Assistance Providers' Training

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

About the Program

- A competitive grant application process administered by the California Department of Food and Agriculture (CDFA)
- Funded through Proposition 68
- Purpose is to provide financial incentives for California agricultural operations to invest in irrigation systems that save water and reduce greenhouse gas (GHG) emissions

Funding and Duration

- SWEEP funding is authorized by Budget Act of 2018
- $20 million available
  - Two solicitations are planned
- Project Grant Amounts: Not to exceed $100,000
- Project Duration: 18 months

  September 2019 – March 2021

Solicitation Timeline

Release Request for Grant Applications (RGA)	December 28th 2018
Grant applications due (10-week application period)	March 8th 2019
Announce and award funding*	June 2019
Project Start Date*	September 2019

*subject to change

https://www.cdfa.ca.gov/oefi/sweep/

Application Period

Application Overview

SWEEP Website and Resources

- Budget
- GHG Calculator
- Irrigation water savings assessment tool
- Videos
- Previously awarded project
- FAQ
- Technical Assistance Providers
- Video of Technical Workshop

https://www.cdfa.ca.gov/oefi/sweep/

Technical Assistance Providers

- CDFA has funded 27 Technical Assistance Providers throughout the state – 7 more added soon
- Contracted to provide one-on-one application assistance
- Some will conduct workshops
- Visit website and contract provider for more information

- https://www.cdfa.ca.gov/oefi/sweep/docs/2018_SWEEP_TechnicalAssistanceProviders.pdf

Eligibility

California farmers, ranchers and Federal and California Recognized Native American Indian Tribes are eligible to apply.

- The irrigation project must be on a California agricultural operation.
- For the purposes of this program, an agricultural operation is defined as row, vineyard, field and tree crops, commercial nurseries, nursery stock production, and greenhouse operations producing food crops or flowers as defined in Food and Agricultural Code section 77911.
- An agricultural operation entity cannot receive a total cumulative SWEEP award amount of more than $600,000.
- Applications cannot build upon any previously funded SWEEP projects directly affecting the same Assessor's Parcel Numbers (APNs).
- An applicant must be at least 18 years old.
- Project must save water and reduce GHG.

Exclusions

- Academic University research institutions and state governmental organizations are not eligible for funding.
- SWEEP funding cannot be combined with NRCS EQIP to fund the same components

Priority Funding

Applicants with a minimum technical review score of 30 will receive funding priority.

1. Benefits to Severely Disadvantaged Communities (SDACs)

http://www.parksforcalifornia.org/communities

2. Socially Disadvantaged Farmers as defined by the Farmer Equity Act of 2017

“Socially disadvantaged group” means a group whose members have been subjected to racial, ethnic, or gender prejudice because of their identity as members of a group without regard to their individual qualities. The Farmer Equity Act of 2017 identifies the following as socially disadvantaged groups: African Americans; Native Indians; Alaskan Natives; Hispanics; Asian Americans; and Native Hawaiians and Pacific Islanders

Severely Disadvantage Community (SDAC)

Defined as a community whose annual household income is below 60% of the statewide average

http://www.parksforcalifornia.org/communities

Project Types

- Improved irrigation water management
- Soil, Weather, Plant Sensors
- Micro-irrigation
- Improved energy efficiency - Pump replacement or retrofit
- Fuel conversion – Including renewable energy installations
- Variable frequency drives
- Low pressure systems
- Reduced Pumping
- Other projects that combine water savings and GHG reductions

Program Requirements

- Only submit one application using the operation's legal business name and unique tax identification number. If submitting as a sole proprietor, use the last four digits of the individual's social security number
- Cannot build upon any previously funded SWEEP project affecting the same Assessor's Parcel Number(s)
- Must include flow meters or demonstrate actual water will be measured with existing flow meters or by the water supplier

Program Requirements

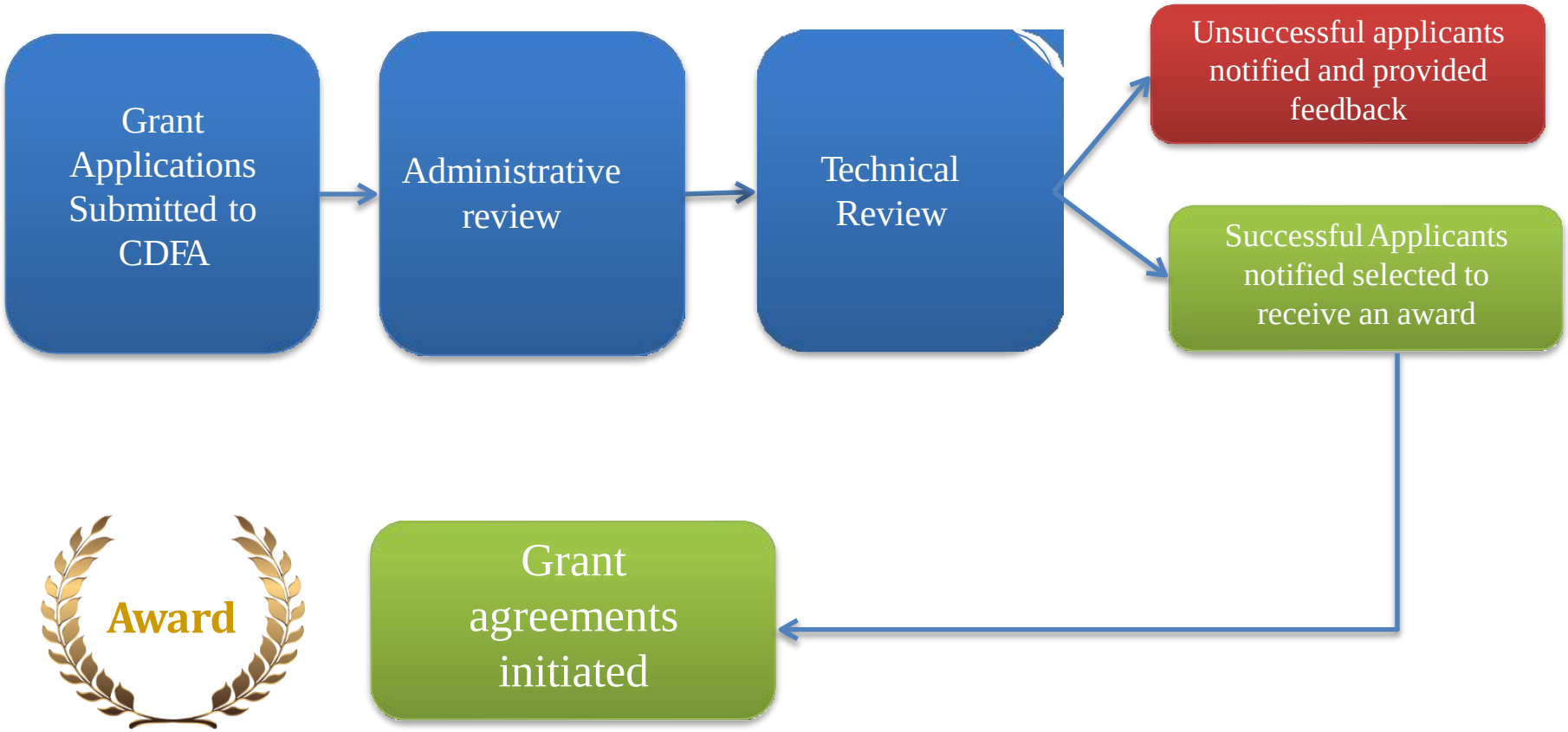
- Must use the SWEEP Irrigation Water Savings Assessment Tool to estimate water savings
- Must use the Air Resources Board GHG Calculator Tool to estimate GHG reductions
- SWEEP GHG Calculator Tool is intended to assist applicants in determining GHG reductions from estimated on-farm energy savings as a result of project implementation
- To complete this tool, applicants must attach a pump efficiency test from existing irrigation pumps impacted by the proposed project and provide additional supporting documentation such as baseline energy records and water savings calculator.

Program Restrictions

SWEEP grant funds cannot be used to:

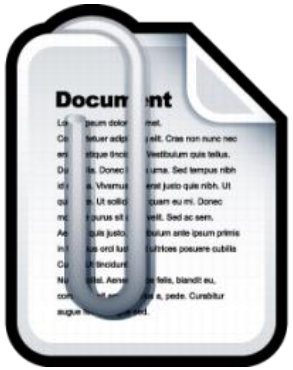
- Expand existing agricultural operations (i.e., additional new acreage cannot be converted to farmland)
- Install new groundwater wells or increase well depth
- Test experimental technology or perform research
- Pay for engineering costs associated with the project design, development and planning
- Lease weather, soil and irrigation water based sensors for irrigation scheduling
- Purchase tools and equipment with a useful life of less than two years

Solicitation Process



Application Attachments

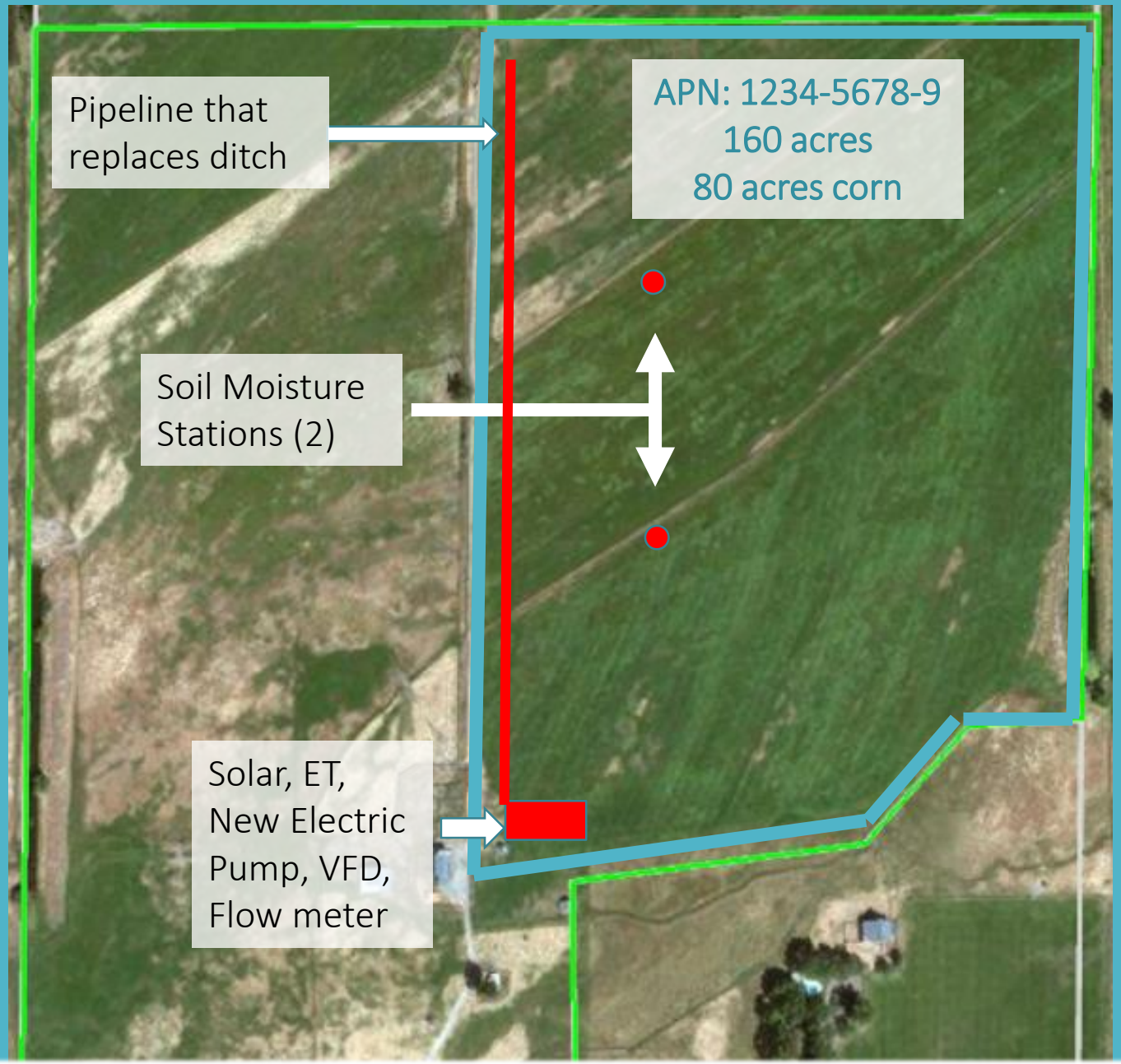
- Project design
- Completed Budget Worksheet
- Solar system quote if the applicant is proposing a solar
- Completed SWEEP Irrigation Water Savings Assessment Tool
- Completed ARB GHG Calculator Tool
- Twelve consecutive months of baseline GHG emission documentation for any pumps that are impacted by the project (e.g., fuel receipts or utility bills)
- Pump efficiency tests and pump specification documents as required by the ARB Quantification Methodology.



Project Design

Project designs must include the following, as applicable:

- Labeled Assessor's Parcel Numbers;
- Detailed schematic of the locations of proposed or improved infrastructure and technology including irrigation piping, reservoirs, pumps, and sensors;
- Pertinent agronomic information, such as the crop and water distribution uniformity value of the irrigation system;
- Holistic project overview using aerial imagery software (e.g., online or electronic mapping tools).



Example of project design

Budget Worksheet

Itemize all allowable costs related to project in categories

- Supplies
- Equipment
- Labor
- Other

Must be consistent with project design

Use the USDA NRCS EQIP Payment schedules as a guide, to the extent feasible, to determine reasonable costs

See the Request for Applications for a list of allowable and unallowable costs

BUDGET CATEGORY	Irrigation System Improvements		$0.00	Irrigation Water Management		$0.00	Pump and Energy Improvements		$0.00
	Include all supplies, equipment, labor and other costs in the appropriate rows related to Irrigation System Improvements. This project type can include costs such as the drip or microsprinkler system or central pivot irrigation, etc.			*Include all supplies, equipment, labor and other costs in the appropriate columns related to Irrigation Water Management and Scheduling. This section can include costs such as flowmeter, soil moisture sensors, ET sensors, weather station, telemetry, etc and one year of subscription fees if needed.*			*Include all supplies, equipment, labor and other costs in the appropriate rows related to Pump and Energy Improvements. This project type can include costs such as installing a new motor, retro-fitting pump / bowl, VFD, etc.*		
	Description	**QTY**	**Subtotal**	**Description**	**QTY**	**Subtotal**	**Description**	**QTY**	**Subtotal**
$0.00 Total Supplies									
SUPPLIES: *Itemize cost to purchase materials (<$5,000/unit) necessary for project implementation with an acquisition cost of less than 2 year.*									
$0.00 Total Equipment									
EQUIPMENT: *Itemize cost to purchase equipment (≥$5,000/unit) necessary for project implementation.*									

https://www.cdfa.ca.gov/oefi/sweep/docs/2018-SWEEP-BudgetWorksheet.xlsx

SWEEP Irrigation Water Savings Assessment Tool

Field or Ranch Name:

Impacted Acres:

Predominant Soil

- Sand
- Loamy Sand
- Sandy Loam
- Fine Sandy Loam
- Loam
- Silt
- Clay Loam
- Clay

Crop

- Alfalfa
- Almonds
- Apple
- Artichokes
- Asparagus
- Avocado
- Barley (planting 11/30
- Barley (planting 4/30)

Baseline, Township, Range

- Humboldt
- Mt. Diablo
- San Bernadino

21S, 22S, 23S, 24S

15E, 16E, 17E, 18E

Practice

- SURFACE IRRIGATION (Under optimal conditions (lined ditch, tailwater recovery, good DU))
- SURFACE IRRIGATION (With an Unlined ditch)
- SURFACE IRRIGATION (With a leaky pipeline)
- SURFACE IRRIGATION (With a Low DU)
- SURFACE IRRIGATION (Without a tailwater recovery system)

Estimated "before" water use 105.0 Ac-in/Ac

ET Zone 16

Notes:
The outputs of this tool are intended as estimates only for the purpose of understanding the potential for various irrigation practices and management techniques to save water.

Before and after practice water use estimated as crop ET adjusted by appropriate system efficiencies. Water provided by effective rainfall and water required for other beneficial uses are not considered because the effect on water savings is negligible.

Data Sources:
Crop ET from NRCS CA Consumptive Use database, representative planting and harvesting dates, UC crop coefficients and CIMIS normal ETo data.

"Predominant Soil" menu: If the actual infiltration rate of a soil at a practice site is significantly different than would be expected for its texture, then select a soil texture that best represents the actual infiltration rate.

For a more detailed explanation of how this tool works, see the "**Background Info and Assumptions**" tab.

Instructions | Before | After | Water Savings Estimate | Background Info and Assumptions

https://www.cdfa.ca.gov/oefi/sweep/docs/IrrigationWaterSavingsAssessmentTool.xlsm

GHG Calculator Tool & Support

Application must include:

A completed copy of the GHG Calculator Tool

An explanation of inputs used in the calculator

GHG supporting documents (pump tests, pump specifications, energy records)

- Actual baseline GHG emission value provided in an application must be supported by documentation (i.e., on- farm energy use records).
- Must cover at least twelve months from the prior peak irrigation and growing season.
- A pump efficiency test and information on pump/motor specification must also be attached.

*NOTE: * denotes a value that was Assumed or Provided by Customer*	**Measured Pump Condition**	**Assumed Condition After Retrofit**	**Notes**
1. **Overall pumping efficiency:**	**57 %**	**67 %**	
2. Nameplate Horsepower:	100.0 hp	100.0 hp	
3. Motor Efficiency:	92 %	92 %	
4. Actual Motor Input Horsepower:	107.3 hp	108.1 hp	
5. Motor loaded at:	98 %	99 %	
6. Flow rate (gpm):	1,710 gpm	2,000 gpm	
7. Pumping Level (ft):	20 ft	21 ft	
8. Discharge Pressure (psi):	53 psi	53 psi	
9. Total Dynamic Head (feet):	142 ft	143 ft	*Rounded TDH = line 7. + (2.31 x line 8.)*
10. Acre-feet Pumped/yr:	314.85 af/yr*	314.85 af/yr*	*Same af/yr AFTER*
11. Average Cost per kWh:	$0.134 /kWh*	$0.134 /kWh*	*Same $/kWh AFTER*
			Estimated Savings from Retrofit
12. Estimated Total kWh per Year:	80,060 kWh/yr	68,970 kWh/yr	11,090 kWh/yr
13. Hours of Operation/yr:	1,000 hr/yr*	855 hr/yr	145 hr/yr
14. Kilowatt-hours per acre-foot:	254 kWh/af	219 kWh/af	35 kWh/af

- Overall Pumping Efficiency (OPE)
- Horsepower

California Air Resources Board
Greenhouse Gas Emission Reduction Calculator for the
California Department of Food and Agriculture
State Water Energy Efficiency Program
Greenhouse Gas Reduction Fund
Fiscal Year 2016-17

General Project Information		
Input Data	Pre-Project	
Field or Ranch Name		
Pump fuel or electricity use (gallons, scf, kWh)		
Fuel type		
Fuel Emissions Factor	#N/A	
Pump and Motor Enhancement and Replacement - This Section required for all applicants		
Input Data	Pre-Project	Post-Project
Motor Rated Horsepower (hP)		
Operational Hours (hr) (if Known) - If unknown, leave cell blank		
Overall Pumping Efficiency (%)		
System Pressure (ft)	User may override system pressure if known.	User may override system pressure if known.
Pumping depth (ft)		
Discharge pressure (ft)		
Friction losses (ft)		
Are you installing a VFD?	N/A	
Irrigation System Enhancement (for systems utilizing pumps)		
Input Data	Pre-Project	Post-Project
Water Savings (SWEEP Water Savings Tool) (%)	N/A	
Fuel Conversions and Renewable Energy		
Input Data		Post-Project
Renewable energy capacity (kW)		
New fuel type		
Fuel Emissions Factor		#N/A
Fuel conversion		No change
Conversion Factor		1

https://www.cdfa.ca.gov/oefi/sweep/docs/GHG_CalculatorTool.xlsx

Review and Evaluation Process

Multiple Levels of Review:

- Administrative Review – Internal
- Technical Review – External

CDFA will select applications for funding based upon the following:

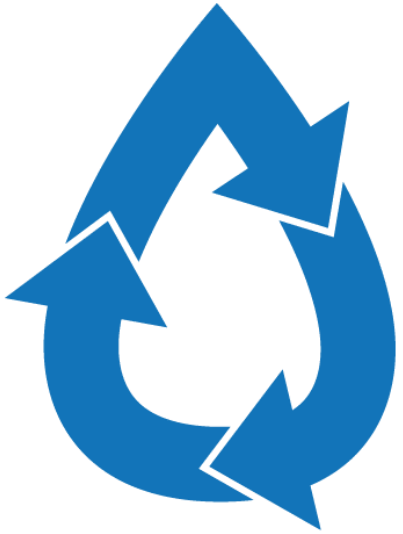
- Score provided by technical reviewer including Number of additional considerations
- Level of water savings (per acre)
- Level of GHG reductions (per acre)

Scoring Categories

Scoring Criteria	Maximum points
Merit and Feasibility	12
Estimated Water Savings	12
Estimated GHG Savings	12
Budget	8
Additional Considerations	6
Total	50

Additional Considerations

- Previously unawarded applicant
- Provision of cost share
- Commitment to irrigation training
- Reduction of groundwater pumping in a critically over-drafted groundwater basin
- Implementation of soil management practices
- Storm water capture and reuse, use of recycled water - *NEW



How To Apply

New application platform

- Applicants will access the application from the SWEEP webpage
- Log in to access application and submit
- Wizehive Submission Portal

Have on hand:

- Project design
- Budget
- Water Calculator
- GHG Calculator
  - Pump test
  - 12 months energy records

https://www.cdfa.ca.gov/oefi/sweep/

Awardee Requirements

If selected for an award, execution of the Grant Agreement is conditional upon applicants agreeing to the following program requirements:

- Pre-Project consultation conducted by a CDFA Environmental Scientist to confirm project information and discuss implementation plans. During the pre-project consultation the awardee will provide an assessor's map and/or aerial map of impacted acreage to verify the location and acreage of the project;
- Post-project verification site visit conducted by a CDFA Environmental Scientist, or in partnership with a local RCD, to evaluate the completed project;
- Post-project quantification conducted by a CDFA Environmental Scientist or a third-party representative to evaluate project outcomes;
- Expectation to use and maintain the installed system for a minimum of 10 years.

Questions?